

**REMARKS**

Applicants thank the Examiner for the careful consideration given this application. Reconsideration of this application is now respectfully requested in view of the above amendments and the following remarks.

In view of the above amendments, Claims 1-3, 5, 6 and 8-27 are pending in this application, with Claims 1, 14, 24, and 27 being independent claims. Claims 4 and 7 have been cancelled without prejudice to pursue their subject matter subsequently.

Rejections Under 35 U.S.C. § 101

At pages 2-3, the Office Action rejects Claims 21-27 under 35 U.S.C. § 101 as being directed to non-statutory subject matter. These rejections are respectfully traversed, but in an effort to expedite issuance, amendments to Claims 21 and 24 are submitted as shown above and as discussed below.

It is initially noted that patent laws regarding non-statutory subject matter have not changed since the "Examination Guidelines for Computer-Related Inventions" ("the previous Guidelines") were published by the U.S. Patent and Trademark Office ("PTO"), preceding the new interim guidelines. It is respectfully submitted that, under those guidelines, the present claims would be found to be statutory.

Current laws and legal precedent clearly allow claims in the form of a computer readable medium, also referred to as a *machine readable medium*, as recited in claims 21-27. See *In re Beauregard*, 35 USPQ2d 1383 (Fed.Cir. 1995). The previous Guidelines clearly show that this type of claim is a *statutory computer program embodied on a computer-readable medium*, where the

computer-readable medium is a carrier wave (see, e.g., Example 13). Thus, the alternative description of machine readable medium as described as a propagated or carrier wave signal in the Specification at paragraph [0007], is clearly statutory subject matter. Further, the burden is on the PTO to set forth a *prima facie* case of unpatentability. The Examiner bears the burden of establishing that a claimed invention is a natural phenomenon. Therefore, absent object evidence to support the position that the signal is a natural phenomenon, such a position would be untenable. M.P.E.P. § 2106 states that: "When functional descriptive material is recorded on some computer-readable medium it becomes structurally and functionally interrelated to the medium and will be statutory in most cases since use of technology permits the function of the descriptive material to be realized."

The computer readable medium, as claimed, is a statutory article of manufacture. The carrier wave may be encoded with the "functional descriptive material." And as will be discussed below, a carrier wave is not intangible and merely a form of energy. Nor is whether a thing is "energy" the proper test. The proper test in this case is whether the thing is a "natural phenomenon." Until patent laws or legal precedent reverse this doctrine, computer readable medium claims in the form of diskettes, optical drives, non-volatile memory and carrier wave signals, etc., are all statutory subject matter.

Although a complete explanation has not been made, the Office Action *seems* to assert that a signal or carrier wave is *non-statutory* because it is "energy" and presumably not "in a tangible medium," as was held to be statutory subject matter by the court in *Beauregard*. As recited below,

there is, however, legal precedent that shows that the view that there is nothing physical (i.e., tangible) about signals is incorrect.

These claimed steps of "converting", "applying", "determining", and "comparing" are physical process steps that transform one physical, electrical signal into another. The view that "there is nothing necessarily physical about 'signals' " is incorrect. *In re Taner* , 681 F.2d 787, 790, 214 USPQ 678, 681 (CCPA 1982) (holding statutory claims to a method of seismic exploration including the mathematically described steps of "summing" and "simulating from"). The Freeman-Walter-Abele standard is met, for the steps of Simson's claimed method comprise an otherwise statutory process whose mathematical procedures are applied to physical process steps.

*Arrhythmia Research Technology Inc. v. Corazonix Corp.* 22 USPQ2d 1033, 1038 (Fed. Cir. 1992).

Appellants' claims are not in our view merely directed to the solution of a mathematical algorithm. Though the claims directly recite an algorithm, summing, we cannot agree that appellants seek to patent that algorithm in the abstract. Appellants' claims are drawn to a technique of seismic exploration which simulates the response of subsurface earth formations to cylindrical or plane waves. That that technique involves the summing of signals is not in our view fatal to its patentability. Appellants' claimed process involves the taking of substantially spherical seismic signals obtained in conventional seismic exploration and converting ("simulating from") those signals into another form, i.e., into a form representing the earth's response to cylindrical or plane waves. Thus the claims set forth a process and are statutory within §101.

Though the board conceded that appellants' process includes conversion of seismic signals into a different form, it took the position that "there is nothing necessarily physical about 'signals' " and that "the end product of [appellants' invention] is a mathematical result in the form of a pure number." That characterization is contrary to the views expressed by this court in *In re Sherwood*, 613 F.2d 809, 204 USPQ 537 (CCPA 1980), and *In re Johnson*, 589 F.2d 1070, 200 USPQ 199 (CCPA 1978), where **signals were viewed as physical** and the processes were viewed as transforming them to a different state." [emphasis added]

*In re Taner*, *Koehler*, *Anstey*, and *Castelberg*, 214 USPQ 678, 681 (CCPA 1982).

Thus, one can safely assume, until a court of higher authority holds otherwise, that a computer readable medium in the form of a signal claim is clearly statutory.

The above notwithstanding, Applicants have elected to amend Claims 21 and 24 to recite “A tangible machine-accessible medium ...” The use of the term “tangible” should successfully address the Office Action’s assertion that Claims 21-27 are directed to intangible media. However, as legal precedent shows (see above), carrier waves are tangible forms. Readers of a patent issuing from this application will be put on notice that the claims recite a machine-accessible medium, which may comprise any number of tangible media, such as solid-state memories, optical and magnetic disks, and a carrier wave that encodes a data signal, etc., as described in the specification. Should a higher court of law create legal precedent that defines carrier waves as intangible, then a reader of such patent will understand Claims 21-27 to exclude carrier waves from the recited “tangible machine accessible medium.” In either case, it is respectfully submitted that these claims are directed to statutory subject matter.

Rejections Under 35 U.S.C. § 102

At pages 3-11, the Office Action rejects Claims 1-27 under 35 U.S.C. § 102(e) as being anticipated by Meaney et al. (U.S. Patent Application Publication No. 2004/0139374). These rejections are respectfully traversed in view of the amendments above and for at least the reasons discussed below.

Claim 1, as amended, recites, among other things, if at least one uncorrectable error is detected in the unit of data, “determining if the at least one uncorrectable error is a data poisoning event, and if so, marking the unit of data with an indication that the unit of data

contains a data poisoning event ~~erroneous data~~; [and] determining, based on a data poisoning policy, if the data poisoning event is to be acted upon, and if so, detecting, by the computer system, the presence of the indication that the unit of data contains a data poisoning event ~~erroneous data~~." (Amendments emphasized.)

The Office Action cites Meaney et al. at paragraph [0043] and in Fig. 3 as disclosing the marking of a unit of data having an uncorrectable error with an indication that the unit of data contains erroneous data. However, these portions of Meaney et al. do not appear to disclose determining that some uncorrectable errors should be data poisoning events and only marking the corresponding data units as having data poisoning events, as claimed. Furthermore, nowhere in Meaney et al. have Applicants found a disclosure of "determining, based on a data poisoning policy, if the data poisoning event is to be acted upon, and if so, detecting . . . the presence of the indication that the unit of data contains a data poisoning event."

The other independent claims, Claims 14, 21, and 24, have been similarly amended, and therefore, similar arguments are applicable.

For at least these reasons, it is respectfully submitted that all pending claims, Claims 1-3, 5, 6, and 8-27, are allowable over the cited reference, and Applicants respectfully request that such allowance be indicated in a subsequent Office Action.

It is noted that support for the amendments may be found, e.g., in Figure 2 and in its corresponding discussion in the specification.

Applicants further note that they do not necessarily agree with the characterizations of either their claims or of the prior art, as discussed in the Office Action and not addressed above,

but rather have chosen to address only selected issues. This is not to be understood as tacit concurrence with such characterizations or waiver of additional arguments.

### ***Conclusion***

All of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicants, therefore, respectfully request that the Examiner reconsider all presently outstanding objections and rejections and that they be withdrawn. Applicants believe that a full and complete reply has been made to the outstanding Office Action and, as such, the present application is in condition for allowance. If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is hereby invited to telephone the undersigned at the number provided.

Prompt and favorable consideration of this Amendment is respectfully requested.

Respectfully submitted,

/Jeffrey W. Gluck/

Date: July 25, 2006

---

Jeffrey W. Gluck, Ph.D.  
Registration No. 44,457  
VENABLE LLP  
P.O. Box 34385  
Washington, DC 20043-9998  
Telephone: (202) 344-4000  
Direct Dial: (202) 344-8017  
Telefax: (202) 344-8300